

## SEQUENCE LISTING

<110> Chory, Joanne  
Cerdan, Pablo D.

<120> REGULATION OF FLOWERING TIME BY THE PFT1  
LOCUS

<130> 532792000800

<150> PCT/US2004/018902  
<151> 2004-06-12

<150> US 60/478,684  
<151> 2003-06-13

<160> 17

<170> FastSEQ for Windows Version 4.0

<210> 1  
<211> 8040

<212> DNA  
<213> Arabidopsis thaliana

<400> 1  
agtgttgag aatctgcagc cttaggtttc tcctttgaa acggttgaaa cgccaccagcg 60  
ctgcgtttga cttcaattac catcggttcc ttattattag gttgtggatc tgggtattgg 120  
ttccacaattt gaacagatct aagccaatcc gatttcttct tatcaccatc gttatatttca 180  
ttggtcatca tctcagttt ctcagttct tcattttat cggtttcattc agatgaagca 240  
gaactccact tgattggcat aaactcttca aacacggcac cggccatcc actagttgtc 300  
cgctcagaac attctgactg gcccacaaca tggcttgaag attccgataa ctccttccga 360  
catgactcga tagctacaag aatgatatgt aaacaattaa gaaactggaa gcgatcgtga 420  
aaacaagaa tatataatc aaaagaggat gtgtataaaac attaccattgg gttacaagtt 480  
cttaacataa agggagctca cgttggaaaga cttgaatctt ttttggatct tcttcttagag 540  
cttctacata ttctgtacat ctcttcattt tctgggtgtt atccatgtca cccgcttgc 600  
acatcatcat tatgaacaga tcttagactc gtttttgctt tgagttacag ttacgaaaac 660  
ataaatctt agagagacag agaagagttt tggatctaaa atgagagaga aaggataaaa 720  
ctttgacgtt ttaagttgg aagttttaaa gggcagagaa agaggattgg tgcataatcg 780  
aggcggggcc gtcgcgtacc taaaaccgaa tcttcttgc ttttagattt attcggattt 840  
tacttggaa agggtagaat ggttaatata ggaataggct gaggtttgtt tgatacaggg 900  
agaataattcg gggatatgtg gattccttcc tttccatatt ctatcgact ggcgatgatg 960  
tcagcattct catgacgttg acgttgcgtt aagaacgcac agtcattttt gtcattacta 1020  
actcttcattt ttttcttgc ttattctcta cctatttttag aaatatacac atgaattttt 1080  
ttgtataaaac aaacgagtgaa agaagaatat ccatagagat tggaaatcaag atatgtaaacc 1140  
agaaaattttt aaacattcat taaaatttaca gtttagaaat tattatattgg tatcatatca 1200  
taaattacat ttttatcaga aaagaaaaag ataaagaagt ttttggcaaa agtggaggaa 1260  
tatttcctcga gtagggggaa gaaactaagc tggaaaaaaa catattaaat tggaaaaaaat 1320  
tggaaaggag agaatcttgc gaagagtgc attcacacat atccagatcc ccccggttcc 1380  
tcatgaattt taaaatttttgc ccccttcacg ctatcgaa ggcacactgccc ccatatcaca 1440  
ccaaacctact cgcctcttt cacgcgttc attgtgtgtt gttgtgtgtt gatataattca 1500  
agcaattctc gtgaataacct gacgattcta aattgggtgg cgacaaaaac acacacaaaa 1560  
aaacacacac tataaaacgg aattaagtgt ctaattttga gtatgtattc ttgagaaaaat 1620  
ttctctaaat agttggaga ttgggtttt tttttttttt gttttttttt gttttttttt 1680  
gaaactattt tttttttttt gttttttttt gttttttttt gttttttttt gttttttttt 1740  
actaggtgtt gttttttttt gttttttttt gttttttttt gttttttttt gttttttttt 1800

aagcaattta aggaagatga taattattca tttgtgatgg tttcttgag ttatggctt 1860  
atggataatg tccatggatg tgaagaccac caacattgtt ttagataaaa aaaaactacc 1920  
acgtaaaaag tagttgatt tgggtctca tgacttctca caaactcagc tttccatagc 1980  
attgcattgc aatttacaat gtgttcccc tcccttagta ctaccaatac taccatatga 2040  
acaacgatcg ggatcagcaa aatctatagc ttttagccg tcttctatga ctcatcttt 2100  
ccacaaaaag tcattgacat caactagtct aagatgactg acatacggaa ttggatccta 2160  
tttccacta ggccactctg aaaagaaaaa aacacagata aaaaggccat gggcccatg 2220  
tccaactttt ggaccaatct taaatggct tcacaatggg tatcatggcc tttatggat 2280  
tcaagtctgg actaactaca actatgtata caaaatgtt atccacatag cccaaaataa 2340  
gatataaat tggtaacttt catttttt tacgtgatcg accttaagct tggtttagt 2400  
tttggcgttc gatgaaccac ctccaaacca attatattct tcacaagatt ctctgcattt 2460  
atcccacaga tggtaaaca tctaataaa ttaaatttcac ttcttcacca aaaaaaataa 2520  
aattaaattc attgccaat ttacacaaat aaaaagatag taacgaccaa gtccttgta 2580  
tatcccattt tctattcgaa gcatccaaac caaattttgtt caatctaatt tatcttctcc 2640  
tctcccgag aagaaggaaa cttacaattt acaaagaacg agcttcaataa aaaatttcca 2700  
aagaaattac cgtcggcgaa tcgttaggct cgagaagaat caccaaaattc caaggggaga 2760  
gagactgaat ttcttttga ttcacgtaac aacaacgctc agagactatg tcgtcgagg 2820  
tgaacagct gatcgctt gctgaaggca cggccgctt gggccctt tgcaaaacca 2880  
tcgctccga ctatctcgag aaaatcatca gggttttctt ttatgaaacc ttgtatctct 2940  
ttaatcctc gttatttgat ttcattcgg agttagggt tagctgatac cttcgaatc 3000  
aggcttaat tcaattgtt tagatcaaac ctttggttt cctctgattt cacaatgtt 3060  
tggtttcgt tggtagtact gtgtttatgtt atttggattt tctgtgtttc atattgagca 3120  
atcacttac gttacctt gttccctaca ttctttttt gtgttaggac attgttttcg 3180  
atacaacgca ttcataaaagc aatgaattt tagttctca cttcgatcac gtaaaaattga 3240  
tattaatatg tgattacaga gaatttagta tataattgccc tggatgtttt gtaactaattc 3300  
acattgttgg ctattcttaa tatccactca acatagttt gtatttcaaa gtagcggttt 3360  
tgtatgttaa aatttcaattt acataatctg tctatgcattt cttgcattt gtcagggtct 3420  
ttctgtggca gtgagttaaa tggagaggtt ctatctga cttatcctcg ttttaagtt 3480  
tactcaagtt ttcattctg agcaacagt taatcaatgtt ttttggccaa actcatatac 3540  
attcgtttac tggtaatca ttgcacaca aaaaataaca gagcaattt gtagtttgat 3600  
gtgtctgatc gtagctttt atatttacta aacttgcaga ggaaccctgt ttctactgtt 3660  
gagctatcac tggtagtctt caatttctat ggttcatatt gtgttacgtg ttgtgcttca 3720  
tcttgtagt tccaaataca aatattttt gggtagtctt tcatggccct ggttacattt 3780  
gcttttggtt tagtaatgtt gttcttatct ttcattcttc ttagctgtt ggttacaacg 3840  
gagttggctgg acaagggatg ttgatattttt cttgcattt cttcttcca tacaatttgg 3900  
tggtagttgtt tcaatgagg tgcacacgc tgaagggtt gccgaagcat tgatgggggg 3960  
aaacttgc tcttttcatc tggacacaa ctataagaca tatgtttggg ccactttctt 4020  
tcaagctact ttgactaat ttacttctc aataaaattt actttttctt ttccatggct 4080  
tcattttatg tggtagtctt tctgtcagcg attttctca tccttaaacc tcacaatttt 4140  
ctctgacttc atgacacaga tgtttctcc tccttcaggc caagctcaac caagtaacga 4200  
tctggaaaaga cactgtatcc taatcacacgc cagcaatcc cacatattgc caacacctgt 4260  
atatcgcca cgttgcacaa atgtggaaacg gaatgagaat ggtatgcgc aagctgagag 4320  
tcgattatca gatgtgaga cagtggcttcc atattttgtt aaggtacttt ttttaactga 4380  
ttccccccagg tattacaact agctataattt actcttttta atggaaattt actaacctgc 4440  
catatgggtg tgcagtgttgc tggttttttgc tctgttggat gtcacaaagca gttccaaaca 4500  
attagagcac tatacaatgc ggtggactgt cgtgttccat tgcatttccat tagatgtaca 4560  
tctatcaaaa gtttttctt tgcacacag ctcttcaaa ggctgttccat attctcaatg 4620  
ctataaactg tgtaatctt tggtttatatac tggtttaaat gcaggggaaag cccaatcaac 4680  
aaagtgcggaa ctgtcaattt gacacggcta agaacaatcc ctatctgtc ctgatctcg 4740  
agaattttgtt ggaggcatgt gctgccttac gtcatttgc tacaatttgc ccacagactc 4800  
agagccctgt gaaagtggac agggccactg ttgtccatc tattccatc actggcaac 4860  
ctccagctcc tgcgtcatca ggttcttctt cttgcacatcc ccattttctt tagtccaact 4920  
atcttgatttt ttctttgtgc ttctttggat tctatctgc ttctctatatac gaagatctct 4980  
ttttgtatgtt ttttgcacca atggacccat tcaaatcgcc caaccatgtt ctgtggacc 5040  
agtttcaact gctactgtt aagttgttgc ttttttttttgc ttttttttttgc agttggagga 5100  
gtcaacttca tctattggca accgacttcc gtttttttttta taagaatttataactatgtt 5160  
tttagccaaa atgaatttgc aatttttttctt ctgtgttccat ataagacattt acaaattttt 5220

atgtgttaat caactagatt taatgttaag ttcatatgaa tatcccattt gtgaaataat 5280  
attgtatact caatcagctt attagatagc atatcttcac attagtagaa gcctgttaat 5340  
cagatttttgc gaatgaaatt gcaggagcct agcaccgtaa cttctatggc accagttcct 5400  
agtttcccc atatcccgcc ttagtgcctgg cctgctacac aagcaattcc ttgcattcaa 5460  
acatcttcag catcaccagt ttctcaggat atggtcagca acgcccagaa tgaccaggat 5520  
attaagcctg tgggtggctcg tggaaatgacg ccaccattgc gtactggtcc tcctgggtgg 5580  
gccaatgtaa atctgcttaa taatcttctt caagtccgac aagtcatgag ctctgcagct 5640  
ctggcagggtg cagcctcattt gggtgggcaa agtgcgggtt caatgcataat gtcaaatatg 5700  
atatacaacag gaatggctac atcttgcctt ctttcacaaa ctgtgttttca aactggacag 5760  
cagggaaat ttcataatggc tgggtcggtt gcaactaatgg gatctgcaca aacgggacaa 5820  
agccgggtc ctaataatgc cttagtcctt caaacaacgt caaatgtcgc ttcaaacctt 5880  
ggtgtttcac aaccaatgca agggatgaaac caaggaagtc attctggagc aatgtatgca 5940  
ggtgaattt ccatgaaccca aaacatgatg agtggtctt gtcaggaaa tgtctcctt 6000  
ggaacagggtg gaatgtatgca tactccaggat gttggccaac aagcgcatac aggaatacaa 6060  
caacttgggtg gcaactaacag cttagtcctt aatatgcagc tattcacagcc atcatcgggg 6120  
gctatgcaga cttcacaatc caaatatgtt aaagtctggg aggtatgtc agtttatctt 6180  
gtctaaaata acggtgatct tggctactt ttacttaca ttcaattt catgcaggga 6240  
aatttatctg ggcaaaaggca agggcaggctt gttttatca ccagacttga ggtgtgttta 6300  
ggggcactta ctatgcactt ttcttcccc ttttctgaat ttactggat cacatgctta 6360  
agcacatctt cctctgtaga actttgttga attgttccaa gtagatatta actaacgtct 6420  
ttgtttatat ttgacagggtt taccgaagtg ctctgcctc tgattgttca gtttataact 6480  
aattgaaata tggaaaactgc ttccctacta aaccttgcata ggagagcagt cgactcctt 6540  
agaaaatgatt gtagctgcta aactaatttt tgcttcctt ttttgcattt ctcccccagg 6600  
tggcagcaaa ctggccacca actatgcaga ttgttcgtctt catatcccag gaccatatga 6660  
ataacaagta atatcttcgt gctatatcct tccttattcc aaatggctca tgggtggatg 6720  
ttgatttcat gccaactaaat atttcacatc accttgcattt aggcaatatg ttggcaaaagc 6780  
tgacttcctt gtgtttcggtt ccatgactca acatgggttc tttagacaac ttcaaggataa 6840  
aaagcttgcgtt agtattgttataaattatgtt ccacttgcattt ccttttcctt attgtttcac 6900  
tacaaattta ataacaaaat gatgaatggt gtttactggt ttattagata ttaggatgaa 6960  
tttagatgtt aagaatgaaaaa tctttggaaa aatataatgtt cttacatctt taaacatgtt 7020  
ctcgtgaat ctatcaatctt ctgcattttt tcaccatataa cttaacatgc cttacgcctt 7080  
tatgtatgcctt tggtttgtt agcctaatcg tggccatatac tattgtcattt ttacatgcctt 7140  
gcttttgcgtt agttgtatataaattatgtt ccacttgcattt ccttttcctt attgtttcac 7200  
cagttgcattt cacagacgc tcttcctctt gtcctctgaca aggcttgcgtt cttgtattgg 7260  
atgcctttcc caggggtaaag gaagttactaa gttttaggtt tctatataatg ttttgcatttca 7320  
cattagtgcac tcttgagggtt tggtttgtt actccttagga tatgggtgtt tttaaaccac 7380  
aaattccaaa tcagcaacacag cagcagcaac aacaactcca ccagcaacaa caacaacaac 7440  
agcagatcca gcaacacacag caacaacaac aacacactcca acagcaacag atgccacaac 7500  
tccagcaaca acaacaacaa caccacgc aacagcaaca gcaacttgc ttttcacacg 7560  
tccaaatca tcagcagcaaa caacaacaac acgcaacaca acagcagcag catcaatttgc 7620  
cacagcttca acaccatcat cagcagcagc agcaggcgcc gcccgttcaat cagatgcagc 7680  
agcagacttc gcccgttcaat cagatgcagc aacagacttc gcccgttcaat cagatgcagc 7740  
agcaacacagca gcccgttcaacag atggtaatgg gtttgcataa gcccgttca 7800  
gatcacaaca aggtgggtt ggaggggcagc ctaacatgccc tggagctggc ttcatggat 7860  
aaataaaaat atcagcttca tggctactt attagattta tcataacttta acattcttc 7920  
tttcttcattt ggtcaactcg atcgtcgcc tgggtttttaga ctctgttttag ttttcatttca 7980  
tggcttttttgc gggctgaaaat tggcatgttca tattctgtat gggctgttca atttagctac 8040

<210> 2  
<211> 2689  
<212> DNA  
<213> Arabidopsis thaliana

<400> 2  
atgtcggttgg aggtgaaaca gctgatcgctt gttgctgaag gcaccggccgc tttgggtcct 60  
tattggcaaaa ccatcgcttc cgactatctt caggtctttt ctgtggcagt 120

gagttaaatg gagagaggaa ccctgttct actgttgagc tatcaactggt gatcttcaat 180  
 tctcatgggtt catattgtgc ttgttggta caacggagtg gctggacaag ggatgttgat 240  
 atttcttgc attggcttgc ttccatacaa tttgggtggg gttggttcaa tgagggtgc 300  
 acagctgaag ggcttgcga agcattgtatg atgtttctc ctcctcagg ccaagctcaa 360  
 ccaagtaacg atctgaaaag acactgtatc ctaatcacag ccagaatcc tcacatattg 420  
 ccaacacctg tatatcgcc acgattgcaaa aatgtggaaac ggaatgagaa tggtgatgc 480  
 caagctgaga gtcgattatc agatgtgag acagtggtt catatttgc taagtgttct 540  
 gtttcttgc ctgttgatg tccaaagcag cttccaaacaa ttagagcact atacaatgc 600  
 gggaaagccca atcaacaaag tgcggacttg tcaattgaca cggctaagaa cacattctat 660  
 cttgtcctga tctcgagaa ttttggag gcatgtgctg ccttaagtca ttctgctaca 720  
 aatttgcac agactcagag ccctgtgaaa gtggacaggg ccactgttgc tccatctatt 780  
 ccagtcactg ggcaacccctt agctcctgtg tcatcagcca atggacctat tcagaatcg 840  
 caaccagttt ctgttgacc agttcaact gctactgtga aagttgagcc tagcaccgta 900  
 acttctatgg caccagttcc tagtttccc catatcccg ctgtagctcg gcctgctaca 960  
 caagcaattc cttcgattca aacatcttca gcatcaccag tttctcaggat tatggtcagc 1020  
 aacgcccaga atgcaccaga tattaaggct gtgggtgtca gtggaatgac gccaccattg 1080  
 cgtactggtc ctctgggtt agccaatgtt aatctgcttataatcttca tcaagtccga 1140  
 caagtcatga gctctgcagc tctggcaggt gcagcctcat cgggtggca aagtgcgggt 1200  
 gcaatgcata tgtcaaataat gatatacaca ggaatggcta catcttgc tccttcacaa 1260  
 actgtttt caactggaca gcaggaaatt acttcaatgg ctgggtcggg tgcaactatg 1320  
 ggatctgcac aaacgggaca aagccgggt cctaataatg ctttagtcc tcaaacaacg 1380  
 tcaaatagtcg cttaaaaccc tgggtttca caaccaatgc aaggatgaa ccaaggaagt 1440  
 cattctggag caatgtgca aggtgaaatt tccatgaacc aaaacatgat gagggttctt 1500  
 ggtcaaggaa atgtctcctc tggaacaggt ggaatgtgca ctactccagg agttggccaa 1560  
 caagcgaat caggaataaca acaacttggt ggcagtaaca gctcaacttcc taaatatgcag 1620  
 ctatcacagc catcatcggtt ggctatgcag acttcacaat ccaaataatgt gaaagtctgg 1680  
 gagggaaatt tatctggca aaggaagggg cagcctgttcc ttatcaccag acttgagggt 1740  
 taccgaagtg ctctgcctc tgattcggtt gcagcaactt ggccaccaac tatgcagatt 1800  
 gttcgtctca tatcccaggaa ccataatgaa acaagcaat atgttgccaa agctgacttc 1860  
 cttgttgc tggccatgag tcaacatggg ttcttaggac aacttcaggaa taaaaagctt 1920  
 tgtcgactca tccagttgcc atcacagacg cttcttctt ctgtctctga caaggcttgc 1980  
 cgcttgattt gaatgtttt cccagggat atgggtgtgt taaaaccaca aattccaaat 2040  
 cagcaacagc agcagcaaca acaactccac cagcaacaac aacaacaaca gcagatccag 2100  
 cagcagcagc aacaacaaca acaccccttca cagcaacaga tgccacaact ccagcaacaa 2160  
 caacaacaac accagcagca acagcaacag cagcatcaat tgtcacagct ccaacatcat 2220  
 cagcagcaac aacaacaaca gcagcaacaa cagcagcagc atcaatttgac acagcttcaa 2280  
 caccatcatc agcagcagca gcaggcgtcg cccctgttcaatc agatgcagca gcagacttcg 2340  
 ccgctcaatc agatgcagca acagacttcg cccctgttcaatc agatgcagca gcaacagcag 2400  
 cctcaacaga tggtaatggg tggtaaagct ttgcacaag cccctggaaatcacaacaa 2460  
 ggtgggtggg gaggggcagcc taacatgcct ggagctggct tcatggata aataaaaata 2520  
 tcagtttcag tgctaattaa ttagatttat cataacttaa cattcttctt ttcttcttgc 2580  
 gtcaactcga tcgtcgccat ggttttagac tctgttttagt tggcccttctt gttcttttgc 2640  
 gcctgaaaat ggcatgtcctt attctgtatg ggtctgacca ttttagtac 2689

<210> 3  
 <211> 836  
 <212> PRT  
 <213> Arabidopsis thaliana

<400> 3  
 Met Ser Ser Glu Val Lys Gln Leu Ile Val Val Ala Glu Gly Thr Ala  
 1 5 10 15  
 Ala Leu Gly Pro Tyr Trp Gln Thr Ile Val Ser Asp Tyr Leu Glu Lys  
 20 25 30  
 Ile Ile Arg Ser Phe Cys Gly Ser Glu Leu Asn Gly Glu Arg Asn Pro  
 35 40 45  
 Val Ser Thr Val Glu Leu Ser Leu Val Ile Phe Asn Ser His Gly Ser

50	55	60													
Tyr	Cys	Ala	Cys	Leu	Val	Gln	Arg	Ser	Gly	Trp	Thr	Arg	Asp	Val	Asp
65						70				75					80
Ile	Phe	Leu	His	Trp	Leu	Ser	Ser	Ile	Gln	Phe	Gly	Gly	Gly	Gly	Phe
						85			90					95	
Asn	Glu	Val	Ala	Thr	Ala	Glu	Gly	Leu	Ala	Glu	Ala	Leu	Met	Met	Phe
						100			105					110	
Ser	Pro	Pro	Ser	Gly	Gln	Ala	Gln	Pro	Ser	Asn	Asp	Leu	Lys	Arg	His
						115			120					125	
Cys	Ile	Leu	Ile	Thr	Ala	Ser	Asn	Pro	His	Ile	Leu	Pro	Thr	Pro	Val
						130			135					140	
Tyr	Arg	Pro	Arg	Leu	Gln	Asn	Val	Glu	Arg	Asn	Glu	Asn	Gly	Asp	Ala
						145			150					160	
Gln	Ala	Glu	Ser	Arg	Leu	Ser	Asp	Ala	Glu	Thr	Val	Ala	Ser	Tyr	Phe
						165			170					175	
Ala	Lys	Cys	Ser	Val	Ser	Leu	Ser	Val	Val	Cys	Pro	Lys	Gln	Leu	Pro
						180			185					190	
Thr	Ile	Arg	Ala	Leu	Tyr	Asn	Ala	Gly	Lys	Pro	Asn	Gln	Gln	Ser	Ala
						195			200					205	
Asp	Leu	Ser	Ile	Asp	Thr	Ala	Lys	Asn	Thr	Phe	Tyr	Leu	Val	Leu	Ile
						210			215					220	
Ser	Glu	Asn	Phe	Val	Glu	Ala	Cys	Ala	Ala	Leu	Ser	His	Ser	Ala	Thr
						225			230					240	
Asn	Leu	Pro	Gln	Thr	Gln	Ser	Pro	Val	Lys	Val	Asp	Arg	Ala	Thr	Val
						245			250					255	
Ala	Pro	Ser	Ile	Pro	Val	Thr	Gly	Gln	Pro	Pro	Ala	Pro	Val	Ser	Ser
						260			265					270	
Ala	Asn	Gly	Pro	Ile	Gln	Asn	Arg	Gln	Pro	Val	Ser	Val	Gly	Pro	Val
						275			280					285	
Pro	Thr	Ala	Thr	Val	Lys	Val	Glu	Pro	Ser	Thr	Val	Thr	Ser	Met	Ala
						290			295					300	
Pro	Val	Pro	Ser	Phe	Pro	His	Ile	Pro	Ala	Val	Ala	Arg	Pro	Ala	Thr
						305			310					320	
Gln	Ala	Ile	Pro	Ser	Ile	Gln	Thr	Ser	Ser	Ala	Ser	Pro	Val	Ser	Gln
						325			330					335	
Asp	Met	Val	Ser	Asn	Ala	Glu	Asn	Ala	Pro	Asp	Ile	Lys	Pro	Val	Val
						340			345					350	
Val	Ser	Gly	Met	Thr	Pro	Pro	Leu	Arg	Thr	Gly	Pro	Pro	Gly	Gly	Ala
						355			360					365	
Asn	Val	Asn	Leu	Leu	Asn	Asn	Leu	Ser	Gln	Val	Arg	Gln	Val	Met	Ser
						370			375					380	
Ser	Ala	Ala	Leu	Ala	Gly	Ala	Ala	Ser	Ser	Val	Gly	Gln	Ser	Ala	Val
						385			390					400	
Ala	Met	His	Met	Ser	Asn	Met	Ile	Ser	Thr	Gly	Met	Ala	Thr	Ser	Leu
						405			410					415	
Pro	Pro	Ser	Gln	Thr	Val	Phe	Ser	Thr	Gly	Gln	Gln	Gly	Ile	Thr	Ser
						420			425					430	
Met	Ala	Gly	Ser	Gly	Ala	Leu	Met	Gly	Ser	Ala	Gln	Thr	Gly	Gln	Ser
						435			440					445	
Pro	Gly	Pro	Asn	Asn	Ala	Phe	Ser	Pro	Gln	Thr	Thr	Ser	Asn	Val	Ala
						450			455					460	
Ser	Asn	Leu	Gly	Val	Ser	Gln	Pro	Met	Gln	Gly	Met	Asn	Gln	Gly	Ser
						465			470					480	
His	Ser	Gly	Ala	Met	Met	Gln	Gly	Gly	Ile	Ser	Met	Asn	Gln	Asn	Met
						485			490					495	
Met	Ser	Gly	Leu	Gly	Gln	Gly	Asn	Val	Ser	Ser	Gly	Thr	Gly	Gly	Met
						500			505					510	

Met Pro Thr Pro Gly Val Gly Gln Gln Ala Gln Ser Gly Ile Gln Gln  
 515 520 525  
 Leu Gly Gly Ser Asn Ser Ser Ala Pro Asn Met Gln Leu Ser Gln Pro  
 530 535 540  
 Ser Ser Gly Ala Met Gln Thr Ser Gln Ser Lys Tyr Val Lys Val Trp  
 545 550 555 560  
 Glu Gly Asn Leu Ser Gly Gln Arg Gln Gly Gln Pro Val Leu Ile Thr  
 565 570 575  
 Arg Leu Glu Gly Tyr Arg Ser Ala Ser Ala Ser Asp Ser Leu Ala Ala  
 580 585 590  
 Asn Trp Pro Pro Thr Met Gln Ile Val Arg Leu Ile Ser Gln Asp His  
 595 600 605  
 Met Asn Asn Lys Gln Tyr Val Gly Lys Ala Asp Phe Leu Val Phe Arg  
 610 615 620  
 Ala Met Ser Gln His Gly Phe Leu Gly Gln Leu Gln Asp Lys Lys Leu  
 625 630 635 640  
 Cys Ala Val Ile Gln Leu Pro Ser Gln Thr Leu Leu Leu Ser Val Ser  
 645 650 655  
 Asp Lys Ala Cys Arg Leu Ile Gly Met Leu Phe Pro Gly Asp Met Val  
 660 665 670  
 Val Phe Lys Pro Gln Ile Pro Asn Gln Gln Gln Gln Gln Gln Gln  
 675 680 685  
 Leu His Gln Gln Gln Gln Gln Gln Ile Gln Gln Gln Gln Gln Gln  
 690 695 700  
 Gln Gln Gln His Leu Gln Gln Gln Met Pro Gln Leu Gln Gln Gln  
 705 710 715 720  
 Gln Gln Gln His Gln Gln Gln Gln Gln Gln His Gln Leu Ser Gln  
 725 730 735  
 Leu Gln His His Gln  
 740 745 750  
 Gln His Gln Leu Thr Gln Leu Gln His His His Gln Gln Gln Gln  
 755 760 765  
 Ala Ser Pro Leu Asn Gln Met Gln Gln Gln Thr Ser Pro Leu Asn Gln  
 770 775 780  
 Met Gln Gln Gln Thr Ser Pro Leu Asn Gln Met Gln Gln Gln Gln  
 785 790 795 800  
 Pro Gln Gln Met Val Met Gly Gly Gln Ala Phe Ala Gln Ala Pro Gly  
 805 810 815  
 Arg Ser Gln Gln Gly Gly Gly Gly Gln Pro Asn Met Pro Gly Ala  
 820 825 830  
 Gly Phe Met Gly  
 835

<210> 4  
 <211> 29  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> PCR Primer

<400> 4  
 cagaggaacc ctgtttctac tgttgagct

<210> 5  
 <211> 29

<212> DNA		
<213> Artificial Sequence		
<220>		
<223> PCR Primer		
<400> 5		
cgttacttgg ttgagcttgg cctgaagga		29
<210> 6		
<211> 27		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> PCR Primer		
<400> 6		
tcccgacat gaagccattt atatgta		27
<210> 7		
<211> 27		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> FT PCR Primer		
<400> 7		
gctacaactg gaacaacctt tggcaat		27
<210> 8		
<211> 27		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> CO PCR Primer		
<400> 8		
tataaggcatc atcaccgttc gttactc		27
<210> 9		
<211> 28		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> PCR Primer		
<400> 9		
aaactctttc agctccatga ccactact		28
<210> 10		
<211> 29		
<212> DNA		
<213> Artificial Sequence		

<220>  
<223> PCR Primer for UBQ10

<400> 10  
ccatggatga aatgtatgcg ttatggtta

29

<210> 11  
<211> 28  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> PCR Primer

<400> 11  
ggtgtcagaa ctctccacct caagagta

28

<210> 12  
<211> 29  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> PCR Primer

<400> 12  
tcaattctct ctaccgtgat caagatgca

29

<210> 13  
<211> 724  
<212> PRT  
<213> Sacharum officinarum

<220>  
<221> VARIANT  
<222> 5017  
<223> Xaa = Any Amino Acid

<221> VARIANT  
<222> 666  
<223> Xaa = Any Amino Acid

<400> 13  
Met Ala Ala Ala Asp Arg Gln Leu Val Val Ala Val Glu Gly Thr Ala  
1 5 10 15  
Ala Leu Gly Pro Tyr Trp Ser Thr Ile Val Ala Glu Tyr Val Glu Lys  
20 25 30  
Ile Val Arg Ser Phe Cys Ala Ser Glu Leu Pro Gly Gln Lys Leu Ala  
35 40 45  
Gly Ala Pro Pro Glu Leu Ala Leu Val Val Phe His Thr His Gly Pro  
50 55 60  
Tyr Ser Ala Phe Asp Val Gln Arg Ser Gly Trp Thr Lys Asp Thr Asp  
65 70 75 80  
Ala Phe Leu Ser Trp Leu Ser Gly Ile Ser Phe Ser Gly Gly Phe  
85 90 95

Ser Glu Ala Ser Thr Cys Glu Gly Leu Ala Glu Ala Leu Lys Ile Leu  
 100 105 110  
 Gln Gly Ser Pro Asn Thr Thr Gln Ser His Gln Asn His Glu Ala Gln  
 115 120 125  
 Lys His Cys Ile Leu Val Ala Ala Ser Asn Pro Tyr Pro Leu Pro Thr  
 130 135 140  
 Pro Val Tyr Cys Leu Pro Thr Gln Ser Thr Asp His Lys Glu Asn Ile  
 145 150 155 160  
 Glu Thr Ala Lys Glu Pro Ser Ile Ala Asp Ala Glu Thr Val Ala Lys  
 165 170 175  
 Ser Phe Ala Gln Cys Ser Val Ser Leu Ser Val Ile Ser Pro Lys Gln  
 180 185 190  
 Leu Pro Thr Leu Lys Ala Ile Tyr Asn Ala Gly Lys Arg Asn Pro Arg  
 195 200 205  
 Ala Ala Asp Pro Ser Val Asp His Ala Lys Asn Pro His Phe Leu Val  
 210 215 220  
 Leu Leu Ser Glu Asn Phe Met Glu Ala Arg Thr Ala Leu Ser Arg Pro  
 225 230 235 240  
 Leu His Gly Asn Leu Ala Pro Asn Gln Thr Ile Thr Lys Met Asp Thr  
 245 250 255  
 Ala Pro Ala Val Thr Met Pro Gly Pro Thr Ser Asn Ala Asn Pro Ser  
 260 265 270  
 Gly Arg Gln Pro Val Val Gly Gly Ile Ser Thr Ala Thr Val Lys Val  
 275 280 285  
 Glu Pro Ala Thr Met Pro Pro Ile Val Ser Ala Pro Ala Phe Ser His  
 290 295 300  
 Val Thr Pro Ile Ser Asn Val Ala Ser Gln Gly Ile Ser Ala Leu Gln  
 305 310 315 320  
 Thr Ser Ser Pro Ser Leu Ile Ser Gln Glu Ala Asn Met Ala Asn Asp  
 325 330 335  
 Asn Val Gln Glu His Lys Pro Ile Ile Asn Pro Val Gln Gln Pro Val  
 340 345 350  
 Arg Pro Gly Gly His Gly Ser Leu Leu Asn Asn Leu Ser Gln Val Arg  
 355 360 365  
 Leu Met Asn Ser Thr Ser Leu Gly Gly Ala Thr Ser Met Gly Leu  
 370 375 380  
 Pro Asn Ile Gly Ala Thr Pro Ile Gln Val His Met Ser Asn Met Ile  
 385 390 395 400  
 Ser Ser Gly Met Thr Ser Thr Pro Ser Val Ile Ser Ser Met Ser Gly  
 405 410 415  
 Pro Gly His Pro Ile Gly Thr Gln Gln Met Ile Gln Ser Thr Ala Leu  
 420 425 430  
 Gly Ser Phe Gly Ser Asn Thr Ser Thr Val Ser Gly Asn Ser Asn Val  
 435 440 445  
 Ala Val Ser Ser Ser Leu Thr Asn Asn Gln Ser Ser Met Gly Met Gly  
 450 455 460  
 Gln Ser Val Gln Pro Val Ala Gln Gly Leu Val Ala Gly Ser Gln  
 465 470 475 480  
 Leu Gly Gln Gly Ile Gly Ala Asn Gln Asn Val Met Ser Ser Leu  
 485 490 495  
 Gly Ser Thr Ala Ile Ser Ser Ala Pro Ala Met Met Pro Thr Pro Gly  
 500 505 510  
 Met Val Pro Gln Thr Gly Val Asn Ser Leu Gly Val Asn Asn Asn Pro  
 515 520 525  
 Ala Met Asn Met Pro Ile Pro Gln His Ala Asn Ala Gln Gln Pro Ala  
 530 535 540  
 Pro Lys Tyr Val Lys Ile Trp Glu Gly Thr Leu Ser Gly Gln Arg Gln

545	550	555	560												
Gly	Gln	Pro	Val	Phe	Ile	Cys	Lys	Leu	Glu	Gly	Tyr	Arg	Ser	Gly	Thr
565	570	575													
Ala	Ser	Glu	Thr	Leu	Ala	Ala	Asp	Trp	Pro	Glu	Thr	Met	Gln	Ile	Val
580	585	590													
Arg	Leu	Ile	Ala	Gln	Glu	His	Met	Asn	Asn	Lys	Gln	Tyr	Val	Gly	Lys
595	600	605													
Ala	Asp	Phe	Leu	Val	Phe	Arg	Thr	Leu	Asn	Gln	His	Gly	Phe	Leu	Gly
610	615	620													
Gln	Leu	Gln	Glu	Lys	Lys	Leu	Cys	Ala	Val	Ile	Gln	Leu	Pro	Ser	Gln
625	630	635													
Thr	Leu	Leu	Leu	Ser	Met	Ser	Asp	Lys	Ala	Arg	Arg	Leu	Ile	Gly	Met
645	650	655													
Leu	Phe	Pro	Ala	Asp	Met	Val	Val	Ser	Xaa	Pro	Gln	Val	Pro	Thr	Gln
660	665	670													
Gln	Thr	Gln	Leu	Gln	Gln	Leu	Gln	Gln	Gln	Leu	Pro	Lys	Gln		
675	680	685													
Gln	Gln	Leu	Gln	Gln	Glu	Leu	Gln	Gln	Gln	His	Met	His	Met	Gln	
690	695	700													
His	Gln	Ala	Ser	Asn	Ser	Glu	Ala	Glu	Met	His	Phe	Ser	Lys	Ala	Glu
705	710	715													
Ala	Gln	Met	Pro												

<210> 14  
 <211> 582  
 <212> PRT  
 <213> Sorghum bicolor

<400> 14																
Thr	Arg	Tyr	Trp	Ser	Thr	Ile	Val	Ala	Glu	Tyr	Val	Glu	Lys	Ile	Val	
1						5			10				15			
Arg	Ser	Phe	Cys	Ala	Ser	Glu	Leu	Pro	Gly	Gln	Lys	Leu	Ala	Gly	Pro	
								20		25			30			
Pro	Pro	Glu	Leu	Ala	Leu	Val	Val	Phe	His	Thr	His	Gly	Pro	Tyr	Ser	
								35		40		45				
Ala	Phe	Asp	Val	Gln	Arg	Ser	Gly	Trp	Thr	Lys	Asp	Thr	Asp	Ala	Phe	
								50		55		60				
Leu	Ser	Trp	Leu	Ser	Gly	Ile	Ser	Phe	Ser	Gly	Gly	Phe	Ser	Glu		
65						70			75			80				
Ala	Ser	Thr	Cys	Glu	Leu	Ala	Glu	Ala	Leu	Lys	Ile	Leu	Gln	Gly		
						85			90			95				
Ser	Pro	Asn	Ala	Thr	Gln	Ser	His	Gln	Asn	His	Glu	Ala	Gln	Lys	His	
								100		105		110				
Cys	Ile	Leu	Val	Ala	Ala	Ser	Asn	Pro	Tyr	Pro	Leu	Pro	Thr	Pro	Val	
								115		120		125				
Tyr	Cys	Leu	Pro	Thr	Gln	Ser	Thr	Asp	His	Lys	Glu	Asn	Ile	Glu	Thr	
								130		135		140				
Ser	Lys	Glu	Pro	Ser	Ile	Ala	Asp	Ala	Glu	Thr	Val	Ala	Lys	Ser	Phe	
145								150			155			160		
Ala	Gln	Cys	Ser	Val	Ser	Leu	Ser	Val	Ile	Ser	Pro	Lys	Gln	Leu	Pro	
								165		170		175				
Thr	Leu	Lys	Ala	Ile	Tyr	His	Glu	Ala	Val	Val	Ala	Val	Glu	Ala	Phe	
								180		185		190				
Arg	Ala	Tyr	Lys	Glu	Lys	Val	Ala	Asn	Leu	Thr	Gly	Val	Thr	Arg	Lys	
								195		200		205				

Phe Met Gly Asn Leu Val Lys Ala Phe Lys Thr Asn Leu Pro Glu Val  
 210 215 220  
 Val Val Thr Pro Ala Ala Phe Asp Phe Asp His Ile Val Asn Gly Pro  
 225 230 235 240  
 Thr Met Gly Ser Gln Thr Ala Gly Val Gly Gly Ile Ile Ser Thr Ala  
 245 250 255  
 Thr Val Thr Leu Glu Gln Pro Ala Met Glu Pro Met Val Ser Gly Ser  
 260 265 270  
 Ala Gly Phe Trp His Ser Ala Leu Gln Gln Pro Ser Ser Ser Ser Leu  
 275 280 285  
 Ile Ser Gln Glu Ala Asn Ile Ala Asn Asp Ser Val Gln Glu His Arg  
 290 295 300  
 Pro Ile Arg Ser Pro Val Gln His Pro Val Arg Pro Gly Arg His Gly  
 305 310 315 320  
 Gly Leu Leu Ser Asn Pro Ser Gln Phe Gln Pro Ile His Ser Thr Phe  
 325 330 335  
 Phe Gly Glu Ala Thr Thr Ser Met Gly Pro Pro Asn Ile Gly Ala Ile  
 340 345 350  
 Thr Pro Leu Gln Phe Asn Met Ser Asn Met Ile Ser Ser Gly Ala Thr  
 355 360 365  
 Ser Thr Pro Leu Val Thr Phe Ser Met Ser Ala Pro Gly Gln Pro Ile  
 370 375 380  
 Gly Asn Gln Asp Met Val Gln Ser Thr Ala Leu Gly Ser Phe Gly Ser  
 385 390 395 400  
 Asn Thr Ser Thr Ala Trp Asp Asn Ser Asp Ile Ala Glu Ser Ser Ser  
 405 410 415  
 Gln Pro Asn Ser Met Ala Met Asn Arg Gln Ala Gly Ile Asn Pro Leu  
 420 425 430  
 Ser Ser Ala Met Asn Ala Pro Ile Gly Met His His Asn Ala Gln Gln  
 435 440 445  
 Pro Pro Pro Lys Tyr Val Lys Ile Trp Glu Gly Thr Leu Ser Gly Gln  
 450 455 460  
 Arg Gln Gly Arg Pro Val Phe Ile Ser Arg Leu Glu Gly Trp Ser Gly  
 465 470 475 480  
 Ile Val Ser Lys Thr Val Ala Ala Asp Trp Pro Glu Thr Met Gln Ile  
 485 490 495  
 Val Arg Leu Ile Ala Gln Glu His Met Asn Asn Lys Gln Tyr Val Trp  
 500 505 510  
 Lys Gly Arg Leu Ser Asn Ile Ser Asp Phe Lys Ser Ala Trp Phe Leu  
 515 520 525  
 Gly Gln Leu Gln Glu Arg Lys Leu Cys Ala Val Ile Gln Leu Pro Ser  
 530 535 540  
 Gln Thr Leu Pro Leu Ser Met Ser Asp Lys Ala Gly Arg Met Ile Gly  
 545 550 555 560  
 Met Leu Phe Pro Glu Asn Met Val Ile Phe Lys Pro Glu Val Val Thr  
 565 570 575  
 Gln Pro Ser Leu Val Arg  
 580

<210> 15  
 <211> 741  
 <212> PRT  
 <213> *Medicago truncatula*

<220>  
 <221> VARIANT

<222> 1381

<223> Xaa = Any Amino Acid

<221> VARIANT

<222> 177, 188, 451, 454, 458

<223> Xaa = Any Amino Acid

<400> 15

Met Ala Glu Lys Gln Leu Ile Val Ala Val Glu Thr Thr Ala Ala Met  
1 5 10 15  
Gly Pro Tyr Trp Asp Thr Leu Leu Met Asp Tyr Leu Glu Lys Ile Val  
20 25 30  
Arg Cys Leu Gly Gly Asn Glu Ser Thr Gly Gln Lys Pro Ser Gly Ser  
35 40 45  
Asn Val Glu Phe Ser Leu Val Thr Tyr Asn Thr His Gly Cys Tyr Ser  
50 55 60  
Gly Ile Leu Val Gln Arg Thr Gly Trp Thr Arg Asp Pro Asp Val Phe  
65 70 75 80  
Leu Gln Trp Leu Glu Ser Ile Pro Phe Ser Gly Gly Phe Asn Asp  
85 90 95  
Ala Ala Ile Ala Glu Gly Leu Ala Glu Ala Leu Met Met Phe Pro Pro  
100 105 110  
Ser Gln Ser Gly Gly Leu Asn Gln Gln Asn Val Asp Thr Asn Met His  
115 120 125  
Cys Ile Leu Val Ala Ala Ser Asn Pro Tyr Pro Leu Gln Thr Pro Val  
130 135 140  
Tyr Val Pro Gln Leu Gln Ser Leu Glu Lys Thr Glu Ser Ile Asp Ser  
145 150 155 160  
Asn Gln Val Asn Gln Leu Tyr Asp Ala Glu Ala Val Ala Lys Ala Phe  
165 170 175  
Xaa Gln Phe Asn Ile Ser Leu Ser Val Val Cys Xaa Lys Gln Asn Phe  
180 185 190  
Ser His Leu Gln Cys Gly Arg Ala Lys Gly Arg Ser Ala Asp Pro Pro  
195 200 205  
Val Asp Pro Lys Thr Thr His Phe Leu Ile Leu Ile Ser Glu Gly Phe  
210 215 220  
Arg Glu Ala Arg Ser Ala Leu Ser Arg Pro Gly Thr Asn Met Pro Ser  
225 230 235 240  
Asn Gln Ser Pro Val Lys Val Asp Ala Val Ser Ala Thr Pro Val Thr  
245 250 255  
Gly Ala Pro Pro Ser Ser Leu Pro Ser Val Asn Gly Ser Ile Pro Asn  
260 265 270  
Arg Gln Pro Ile Pro Ala Gly Asn Val Thr Pro Ala Thr Val Lys Val  
275 280 285  
Glu Gln Val Pro Val Thr Ser Gly Pro Ala Phe Ser His Asn Pro Ser  
290 295 300  
Val Pro Arg Ala Thr Gly Thr Gly Leu Gly Val Pro Ser Leu Gln Thr  
305 310 315 320  
Ser Ser Pro Ser Ser Val Ser Gln Asp Ile Met Thr Ser Asn Glu Asn  
325 330 335  
Ala Met Asp Thr Lys Pro Ile Val Ser Met Leu Gln Pro Ile Arg Pro  
340 345 350  
Val Asn Pro Ala Gln Ala Asn Val Asn Ile Leu Asn Asn Leu Ser Gln  
355 360 365  
Ala Arg Gln Val Met Ala Leu Ser Gly Gly Thr Ser Met Gly Leu Gln  
370 375 380

Ser Met Gly Gln Thr Pro Val Ala Met His Met Ser Asn Met Ile Ser  
 385 390 395 400  
 Ser Gly Thr Thr Ser Ser Gly Pro Thr Gly Gln Asn Val Phe Ser Ser  
 405 410 415  
 Gly Pro Ser Val Ile Thr Ser Ser Gly Ser Leu Thr Ala Ser Ala Gln  
 420 425 430  
 Val Gly Gln Asn Ser Gly Leu Ser Ser Leu Thr Ser Ala Thr Ser Asn  
 435 440 445  
 Ser Ser Xaa Cys Leu Xaa Glu Phe Leu Xaa Phe Val Arg Gly Gly Lys  
 450 455 460  
 Val Arg Ser Lys Phe Val Val Leu Arg Gly Pro Ala Lys Met Met Gln  
 465 470 475 480  
 Asn Gly Val Asn Met Asp Glu Ile Gly Gly Gln Ser His Glu Thr Gln  
 485 490 495  
 Asn Gly Trp His Arg Ser Ser Pro Ile Trp Glu Gly Ser Leu Tyr Gly  
 500 505 510  
 Arg Lys Gln Gly Glu Pro Ile Phe Ile Thr Lys Leu Glu Gly Tyr Arg  
 515 520 525  
 Arg Ser Ser Ala Ser Glu Thr Leu Ala Ala Asn Trp Pro Pro Glu Met  
 530 535 540  
 His Ile Val Arg Ile Ile Ser Gln Asp His Met Asn Asn Lys Lys Tyr  
 545 550 555 560  
 Val Gly Glu Ala Asp Phe Leu Val Phe Arg Ala Arg Asn Thr His Gly  
 565 570 575  
 Phe Leu Gly Leu Leu Gln Glu Lys Lys Leu Cys Ala Val Ile Gln Leu  
 580 585 590  
 Gln Ser Gln Thr Leu Leu Ser Val Ser Asp Lys Ala Cys Arg Leu  
 595 600 605  
 Met Gly Val Leu Phe Pro Gly Asp Lys Leu Val Ser Lys Ser Gln Leu  
 610 615 620  
 Ser Gly Gln Gln Gln Gln Gln Met Gln Gln Gln Met Gln Gln  
 625 630 635 640  
 His Gln Gln Met Gln Ser Gln Gln Gln His Leu Pro Gln Leu Gln Gln  
 645 650 655  
 Gln Met Gln Gln Gln Gln Gln Gln Gln Leu Pro Gln Leu Gln Gln  
 660 665 670  
 Asn Gln Gln Leu Ser Gln Ile Gln Gln Ile Pro Gln Leu Gln Gln  
 675 680 685  
 Gln Gln Gln Leu Pro Gln Leu Gln Gln Gln Leu Ser Gln Leu  
 690 695 700  
 Gln Gln Gln Gln Gln Leu Pro Gln Leu Gln Gln Leu Gln His Gln  
 705 710 715 720  
 Gln Leu Pro Gln Gln Gln Met Gly Trp Cys Trp Asn Gly Ser Asn  
 725 730 735  
 Leu Cys Ser Arg Ser  
 740

<210> 16  
 <211> 15075  
 <212> DNA  
 <213> O. Sartiva

<400> 16  
 ggcacccgat tcttagttac tccctccatt ccataatata agggattttgc agtttttatt 60  
 tgcattgttt gaccactcat cttatataaa aaaattgtgc aaatataaaa aacgaaaagt 120  
 tgtgcttaaa atactttgaa taataaaagta agtcacacaa aaaataaata ataattccaa 180

attttttaa taagacgagt ggtcaaacag tgcaaataaa aactcaaaat cccttatatt 240  
atggacgga gggagtagct cctaaaataa cccttagttt agccgaaagg ctacactcaa 300  
aactaacctg atgtatacta agaaagtaat aaatgctcac aattcttccc aactatagag 360  
taccattatt attacattt ctaaacacca taaaagaaca atacaactct tttttacacc 420  
aaaattccc catattcccc tatggccca cctgtcatcc acacaaaagc ccacccct 480  
tcttatggc cttggggccc atataaatta gacccagta ccccacccct tcgccgtcat 540  
ctctctctaa cctcacgaaa cctaacaaga agaagaagaa gagaattcc ggcaggaaag 600  
ggagggaggg agaagtcgtt ggtgcggggg agattgattt cgcggaggg agggagctc 660  
gagaggcggt gattcgggga gtcggcaggg tggcgccggg tgcggcggcg gccccggg 720  
ccgtcggggg gatggcgccg gcggcgccg agaggcagct ggtggggcc gttggagggg 780  
cggccgcgt gggccgtac tggccgtca cctgtggga ctacgtcgag aagatcggtc 840  
ggtaatgctg cggccgtgtc ttccctcccc cggccgcgtca ccctgtttt ttgttactag 900  
ttgactgtac ggcgtcgcc gattagtgc tcttggattt cttgatgtgg aagaattgg 960  
cccttggg attgttttagc tggttatttt gagacgaagg gactacatgg aacgcgaagc 1020  
ggttagctgt tagttcttga tagtggaaat tagcagctat ccgtgtatgt gtttgcata 1080  
cacagtttt tagttatatt agtccgatatt atcggttactt ccaagcatta gttaggagatt 1140  
tggagatttgg ttgtttgtc tcacccctt aattgcaaa attaaatgtt actagtttagc 1200  
ttcaattctg tttcacaatg cttattcaaa gagtaagaat gcaagcgtat catcgatgtg 1260  
tggaaattcg tggtttcttga atgaactggg tggttgttgg ctatatggg ttgtggcacg 1320  
agatacatct tttttgtc tcgttgcgtt gggactttgtt atcaactgtat atgtgcagat 1380  
ctatgacaga atgttagcata attcatctt tactttgggt tttatgcctt ttcttagttcc 1440  
tcctgtctca ttcagaagta tttttcttca gtcttagcata tttagtgcgtt ttgttttca 1500  
tgaatgatga atgattccca tgaaaaccaa tttcagtttt tggctggta tttagtact 1560  
cttctgtaca accagtaatg taatgatggg atgtctgtt ggttatggg atggctttc 1620  
tgaatgcctt gttttactc ttgttaattt gttatgttgc tgggttc tgggtgtat 1680  
tggaaatattc atcacatgag tcaaattct tgggttcaag ctttccaaat aaaaaaaaata 1740  
atgaaagtgg gagctgttg tattgttggt caataatcag tttgctctga attattagg 1800  
tttgggttgc ttttgcatttcc tcctgtgtt attatttagc ttctgtggaa acagttaaaga 1860  
aaaacttcgt agtctgttg agaaatcaaa ttaatgttag acgaattctg ttgtcaatt 1920  
taaactgtta tttctctgac aagtgttctg tttttagaac tggaaataata tctctattt 1980  
caacttgattt aaaaagagcag cagttagcca aacatcaaa tttctataag ctactgtacg 2040  
gaacaggatt atcatagttcc acctcaacgc aaaaatccaa tggagccctt gatgttatgt 2100  
ggtgatccac cacagcttca ctctcatata cttactatca tggaaactttt aagctcatct 2160  
cttgcgttca attttgtca atttctgttag cacttagtaa ctttgcatt tttagtacta 2220  
ctattcatga agcatttcaaa tttatgcagg agttttgtt cacatgaaat ggcaggacag 2280  
gtaatttgct ctcgttattt atcgtcggtt ttactacttg atccatgtt ccttgacttg 2340  
tgtcaaaact caaaagtgtt aattattatc gtgttatgtca gaagctcgca gggacacccc 2400  
ctgaacttgc attagtcgtc ttccatcaccc atggcccttta tagcggtaaa gtttgcattt 2460  
ctccatgccc taagttttt attatgtcc attgtcaattt tttgttattt gttctatatc 2520  
aacaaaacat gtaagctatg ataattcgct tttgattccct tgcagctttt tgggtgcaac 2580  
ggagttggatg gacaaaagat atgaatgtgt ttctttcatgt gttatctggaa atatcatat 2640  
gtgggtggagg cttttagtggaa gctgttattt ctgaaggctt tgcgttgcgtt 2700  
tgacatattt gcatcggttca gttctttca ctttttgcac ataatgactt cctctgggt 2760  
ttccctgtact tttttttttt ggttcaaaat gcatatattt gaaactgtgg ttactactt 2820  
ccaaaatttc agtactgtat atgggtgcct acttttgatgt tccctgtcaaa ggttttagca 2880  
ttttttttgg ctttgcattt catgttcat ttggcatatg aaatgtatgtt tctttttgc 2940  
caaatggcaca atcttcattt ttaacatcaa cagtagcaac ctttagttcc aggcaagttg 3000  
gurbgggttag gcttagagatg aaactgtatg gcatggccacaa aaaaactaaag ggaagttatag 3060  
tacttagtaat aacaatataatg ttaaagaaga cgtgaatttag gtcgttgcattt tgggtatgt 3120  
gaccggccat ttccatgcaaa ctctatccaa aaccatattt catctccaca ggaacgactg 3180  
ggatttttat gatggcttac caatgttatac gcaacattttt ccctttactc agcggttagga 3240  
ccagctatgc tgaagcaaa gcatggatgtt gatctttt aacagagata ttttgcattt 3300  
ctagatgtatc gggaaatctt cttttcatct ctcactgtcac ctgttgcattt gtttgcattt 3360  
gtctaaatattt gttatgttgcattt ctcatgttcaaa gccctgtaaa ctatttagttg 3420  
agccctggaca ttatgttagaa ccatgtatct taacaatataca ttttgcatttcc aacccctttgg 3480  
attactttat tttccaaagaa ttatagtttgcattt gtttgcatttcc agtatttcc 3540  
ctagaatctg tcctttaatg cccttgcata caacatatgc ttcgttgcatttcc 3600



tatgtttct cattgtaaaa acaatcatca ctttcaggag ccaacaacctt taccggccat 7080  
ggtttctgca cctgcttct cgcatgtaac acctgttgc aatgggtttt cacaaggatt 7140  
atcatcgta caaagtccct caccgtccct tatttcacag gaaactaattt ttgcaatga 7200  
tagtgtgcaa gaacataaagc cttaataaaa ccctatccaa cagtcattt gacctgggg 7260  
tccagcaat gtcagcatcc tcaacaatct atcacagcat cggtcagttt caaccattat 7320  
atcagggttga atgcctggca tccctatgtc tggacacagga cagtcattt gtagtcaaca 7380  
agtcgtacaa aacactgtt ttggatcaaa cacacccata acaggcaattt caaatattgc 7440  
tgtgtcatct tctttgggtg gcatccaaag caatatcggt atatcagggc ctccgtgac 7500  
acagggaggt tcaatgggtt gtacgcaattt gggacaagggt ggaatcaataa caaaccaaaa 7560  
tatgataagt agccttggga caacaactgt ctcttctgca cctgcaatga tgccaacacc 7620  
agggatggct caacaggcag gtgtaaattt tcttgggtgt accaacagttt ctgcatgaa 7680  
catgcctata gtgcagcatc ctaatgcgc gcaacacagc aacagcagca 7740  
gcagcagcag ccaccggccga agtacgtcaa aatttggag gtaaaagattt ctgtcttgc 7800  
ctagcatcca ttagtcaattt ggctctaccc tccaaaccctc tagtagctt gtagtgggtt 7860  
gctaaatata aaaggaaata ttccgtatga cacacatgtt attaatgtt ttcttaattt 7920  
tgaccatgag ctgcaataat atatgcaccc tcccaactat tggaaatcggt tgccctaaaa 7980  
ataaaaaagg aactattttaa acccttctgc taatcaacca gatgagatag ggctgtgaat 8040  
ggtcagagtt agtctcttta tttttggcc ttttaacagt tcccaacctt cttttccctt 8100  
gagaaagcct tccttagataaaa aaaaagacaac aatttgaagg ttgacctctt ggaattcagc 8160  
ctgggttgtt ccttggc agtgtttttt acttcaagtgtt ctgagtcattt tccttatttt 8220  
caaagaagaa agtagtggac ccaccattttaa agatgctgat tttttttca tccgagtaaa 8280  
gcctattttt ccatcctcaa ctgtgttagt cttagaaatca acctcagcag aggccccctt 8340  
cgtaccatgaa accatgctgg tgggtggagg ggtgcgacta ttctgcaataa ccctatagac 8400  
acatgccacg tgcgtcttggc ggcaggcatc ttgcggcatc aagggtgacac ataaatcgcc 8460  
ttgatctgtt ggcatttagca aagggtgttga aagggtctagt tagtaagaaa ctaacatttt 8520  
tctttaatct atttcccctt gtccttggc agtttgggtt cagctgtttt gatggatttt 8580  
tctctccgtt tgcaaggaca cctcaattttaa gtgcataaga acctgtatgg ctgtatccat 8640  
accacattca tttcatgtat gaagaataact tccctaaaag agctaacataa cgagcacatg 8700  
attatactca aatttagttt aagtcaactg ctatttttt cgtgtcattt ttgggttgtt 8760  
atataattttt aatgtaaattt ttatgttca tttatgttgc ctcaagtttgc ctatgttgc 8820  
gatactggta tcatcgatca atatgttattt tggttgggtt ggatgcataaa tatgtatgtt 8880  
ttcttattttt atttcaggga actttatctg ggcaaaaggca aggacaacactt gtattttatct 8940  
gtaaacttga agtaagttt tgggtgttgg atgaattgtc tggactccg actattttca 9000  
ccccccctaa ctcgtccaca cagatgaccc ttgctcattt ttatgcccattt ttgaagctga 9060  
ctgtctcaga aaaaaaaaaaa gatcacaaga atccctgaat tggatattttt atttgcac 9120  
tcatgatttt tcaaatcttgc tgggtgtactt gaaatgaaat tatgtattttc atagtttgc 9180  
tgtgcaccc tatactgttgc aatcaccctt tggacttgc ttgtacttgc ttgtcttaca 9240  
ttttttttt tttcaacaca ttatctgca caaagcatat actttttttt aatttctgc 9300  
tttagcatg tctcacagggtt ttaggggtt ggaacagcat ctgaaacgtt agttttcgaa 9360  
ttgttgcattt gtttttgcattt tttttttt tttttttt tttttttt tttttttt tttttttt 9420  
tgggtgtattt cgaaccaaca aatcaccctt tggacttgc ttgtacttgc ttgtcttaca 9480  
gtagaagagu rdactggagc aatggctgtt tggacttgc ttgggtattttt caagtttctg 9540  
ttccatgcaaa caactatgtt agccattgtt tgggtttttt aataaaactt tactgtacaa 9600  
aaggcttacg gtacaagacc aaaatggaaag caactcaagt tataatgtt gaaatgggtt 9660  
gatataatca atgaatgttgc tggattttgtt ttatcttccc tccgtctcat attataagg 9720  
attttgggtt tattgtacat atcctatgtc caggttgc tggacttgc ttgtacttgc 9780  
ccacccaaaaa tcccttataa ttagggactt agggagttt acagtgccctt aatctgtt 9840  
agtgaatggaa acctccaaac ctagtcttgc aatattttttt tggacttgc ttgtacttgc 9900  
agaaatgttgc tggacttgc tggacttgc ttgtacttgc ttgtacttgc ttgtacttgc 9960  
gaacatgttac cttctttgtc cagacttgc gcaacttgc tggacttgc ttgtacttgc 10020  
cgcctttagt ctcaggagca ttagtcaattt aatattttttt tggacttgc ttgtacttgc 10080  
aaaaatgttgc catttcttaca ttcttcaattt tggacttgc ttgtacttgc ttgtacttgc 10140  
tttgggtttt tggacttgc tggacttgc tggacttgc ttgtacttgc ttgtacttgc 10200  
atcagcacgg cttctttggc caacttgc tggacttgc tggacttgc ttgtacttgc 10260  
tgggtttttt tggacttgc tggacttgc tggacttgc ttgtacttgc ttgtacttgc 10320  
actcatatgg gtccttcaac tagtcaattt agtccccaaag ctttgggtttt tggacttgc 10380  
taatccctgtt gcctatgttgc caccgttgc tggacttgc tggacttgc tggacttgc 10440

taccttaggt ctccagccaa cctagagtat gggacaaccg aattccgttt gctaaattat 10500  
 gtaatataat tgaagacaga agtaggctgc tgttatgctt gagggcatat cagtcatttt 10560  
 atatagtctt gggggccctc aggttcccag cagatcaagg caatgttga tggttgagg 10620  
 atacatgaac tattaatctt tccgttaat caatcatcac ttcttaaatt tctgttaatg 10680  
 tttcagtggtt acttctgtt cagtgccag tgattcaact gccttcgcaa actttgttgt 10740  
 tgtcagtgtc agacaaagct gggccctca ttggcatgtt gttccctggg gtacgttgc 10800  
 tgcagttgcg gctatctcta tctgccttc tggttaccat tttccgctg tagctgaagt 10860  
 aattcccttc ccccccaggat atgggttgtt ttaaaccgca ggtaccaacc cagcagccac 10920  
 caatgcagca acaacagttt caacacgcg agaaccaact acaacacgcg aatcagctcc 10980  
 accacgcgca ccagctgcaaa ccacagaacc agctgcaaca gcaacaccag ctgcaacaac 11040  
 agttacaaca gcagcaacta caacaacaca tgcaactgca gacacaaggc cttccgcttc 11100  
 agcagcagca atcccaaggc catccgcttc agcagcagca gatgcagcaa atgcagcaac 11160  
 aacacgcgca gcagcagattt cagcaaatgc agcagcagca gcagatgcgag cagatgcac 11220  
 agcagcagca gcagccccaa cagttcagc agcagcagca accgcagatg gtcggcaca 11280  
 gtagggggca gcagcaacca cagatggctg gcacggggat gggggcagcag caaccgcaga 11340  
 tggtcggcgc agggatgggg cagcaataca tgcaggggca cggtaggacg gtgcagcaga 11400  
 ttagtcaagg gaagatggcg ccgcagggtc caggaagcat gccgggtgca gggagcatgc 11460  
 ctgggggtgg ctacctatct tgaagcacct gatagcctga atgcagaag aataagtggg 11520  
 caatttaacc cagccctttt ggctgcacaa gctatatacg tcatggatta cttggccagc 11580  
 atccctaggta attttccac cttagtggtt gatacatagt aggtttctc agtagtttg 11640  
 ttttggctgt gatgtttac ctgtagatag cgtcttggag cctacacggc ctcatgttgc 11700  
 gttttgtgtt gcttctttt atgtactgc cttatgctta gctttagtgc gcttggaa 11760  
 gatcaaattt aaaggattaa ttaattataa gtaactctgt ttaaggattt attgaccaat 11820  
 ttcacttggg agcctcccaa ataaatatga ctgccttagg attttcagc tttgtatatt 11880  
 atgcatcaag agtatggcag agtggcagta actgattaaa attattgtca tcaaattcga 11940  
 accaattttac cctaaattaa aatgctggcc tatgaaggaa tccaaacata ttgggattac 12000  
 acaggcaaga tcattcacag aaaaagatac gttcaagatg accatgacga taaaaaagg 12060  
 cctgcataagg aattaaattt tctgcccacg gtgctaaaca acaaacaaaa taaaactttt 12120  
 ttagttaatatt gctaaccata tcattacagt ttggcttgc tactgtctt cagttatgag 12180  
 taacatcaat tacaataat agaatcgaga agagttctaa atgaaacaat gaccggccca 12240  
 gcctcaatt ttctccctc caaaacacat gttcatttt aatttttcag acatctttt 12300  
 ttccaaaaac aaaacaaactt attgaaatgg ccagaaccag tacaatgtca ttttactcta 12360  
 caggttggcc aatgatttgat atgcgtcaat ttttctttgg atccgagctt ccgttcaggt 12420  
 agccttcaag aatttgcgtt caggcattca tggctcgccg atccagtaga ctgtggttcc 12480  
 agagtttgcataaaaaac ctccaaacacc ttttcatcca gcgataaaaa gttgcaatg 12540  
 aaacaaacag ctaaagagag gtgtctgcat ctgttaggcaaa caagctacac acgcaaggca 12600  
 aggcatgtt caataactata ttcttataat cagccactt ccatagtaga gctggatattt 12660  
 gtacaagttc ttgtccatga aactgctgca atgcttcgca tgcccaggaa atatggccat 12720  
 ccgcttagtac ccgurtgcaaa ttttccactt ttcagtaaga cgggtgaaat atgcagtaga 12780  
 taatgaataa aatgactgca catatgtaaa aggaatcaag tgcccttgc gttctgtatgt 12840  
 cactgcttaa ctcttggat gaaaaaaaaga agaaaaaaaaca atcctttggg 12900  
 catatagttt gtagagatag aggtgggattt caatgttagat gagggtgtc agccatgac 12960  
 aatgtatggt tgattacgta cggccacaggc aacaacagca tggtgatata tggcgctt 13020  
 gtagcccaa atgcactgg gtagtgcgtt ggtggcatcg gcaaaaggc gagaacacaga 13080  
 ggtgctgaca atcatggcat cttagtaaag gttagcagca aggagaaga aggcatact 13140  
 agtattatgtt ttccgtctt aagaaaataa caatcagagc cataacaccc ggcacattac 13200  
 aagtgtat tcatggctt taaccatgc aattcttaaa aaaaaaaac atgcaacatc 13260  
 ttcatggaa aatcccttca tgatgtttc agacatggta tgcaaatgaa tataaatgtc 13320  
 tggttcccaa gctgtatacc acaataatag ataatggata tagcggggaa ggcctgaccc 13380  
 ttgttccga acaaataatg tccacatatg cataataatgt ttctcgctt ttgttacatc 13440  
 aacaaaatca tcaagcatct gcatttactc agggaaagtta aggtatcaag aatttggaca 13500  
 catttatgtt tgagaacaga gcaagcatag taaaacttact cttctatctt caaaatcagc 13560  
 aatgtcatca tcaacttcat cttcactatc acgatctgag aaaacttgc ccaatgccc 13620  
 tggctacaac agtgtacta tgtagtcaag cttagatttca attttatttg agccagactt 13680  
 caaacggatg caaaaaagat catgtctca taattaaaaaaa aaaaatgaca aaaggggaa 13740  
 aggggctcaa gtttggccat ccaacccatag attctccaca taagatttgc tagatatgca 13800  
 tgcgtttcca aagtggctgg ttttggaaatc tgtagtgc aagtttgcata atatataat 13860

gccagtgaat gtgaaatatg ccattgtgaa taatttgga ccaaagcacc cctgttctt 13920  
 attcctccat tatkcttaat tcattgtttt cctgtcgcca tggggcccc cacaactaa 13980  
 atttgcctca tgcactagat ccacatggt gctataacca aggctgagct acccgcatgg 14040  
 actcatgatg agcatccatg ttactgccc atccacagga ttgagctttt ctacagcata 14100  
 acgtgctgg ggtaacttgg gctaagatgc tgccatgctc accccttggg atagcagtgg 14160  
 ttcaaccag tgattgctgt gtcaacggca acgtgtgata tctgttga cttgatcctc 14220  
 aaacatggga agtctcggtt gaaacctcac caaaatggag tgaaatgtga atcaggtgtt 14280  
 cagccagact tggggaaagat ggtcatgcca gccctatgcc aagtgacatg actgggagg 14340  
 agggaaagat cccactgagt acaacagtgg cagttagcca tgggagggtg atacaagttg 14400  
 gcaatgctat attcaaaagg gaaaacattt cccagaccat ggattttt tctggcagcc 14460  
 aggtccctga tgccttagtc atcgcaagc ttgatttggc acttagtcag ttctgatcct 14520  
 ttcctacagt tcatccttt tctctatttc tattttgtt acccagtaac tagtccaaa 14580  
 accctggta ttctggta cgtaacttac tactccctcc aatttccaa ctgatcatca 14640  
 tataactttt ttaaggttat tcccaaatga tcatacatatt agtattcatt cactaagtct 14700  
 gttcgttatt ctgtcatgg gagtagatgg acattggtgc atgcgtccat gcataacaatc 14760  
 cttaacaacc aacatgcaat gttttgattt gttagtgctt aggaagtatt ggggatagtg 14820  
 catgaagtt tgtaaccgaa ttaaatgttag tatgagagaa ttattagctt tccttggct 14880  
 tggcttata atatgatgat caattggaa tggaggttgtt agtaagaaat cgattagttt 14940  
 ttttagatgag aaatgcagac gagtagggag gacattttctt gatgttctc tcgtgaccat 15000  
 ccagagtat agcagggaaac tttttagttt cgtatagaaa atttaccat ctatataacc 15060  
 ctttattaac tccaa 15075

<210> 17  
 <211> 832  
 <212> PRT  
 <213> O. Sartiva

<400> 17  
 Trp Arg Arg Arg Arg Pro Arg Gly Ser Trp Trp Trp Pro Trp Arg Gly  
 1 5 10 15  
 Arg Arg Arg Trp Gly Arg Thr Gly Pro Ser Pro Trp Arg Thr Thr Ser  
 20 25 30  
 Arg Arg Ser Cys Glu Lys Leu Ala Gly Thr Pro Pro Glu Leu Ala Leu  
 35 40 45  
 Val Val Phe His Thr His Gly Pro Tyr Ser Ala Phe Cys Val Gln Arg  
 50 55 60  
 Ser Gly Trp Thr Lys Asp Met Asn Val Phe Leu Ser Trp Leu Ser Gly  
 65 70 75 80  
 Ile Ser Phe Ser Gly Gly Phe Ser Glu Ala Ala Ile Ser Glu Gly  
 85 90 95  
 Leu Ala Glu Ala Leu Met Ile Leu Gln Gly Ser Ser Ser Asn Ser Gln  
 100 105 110  
 Asn His Gln Ser His Glu Val Gln Lys His Cys Ile Leu Val Ala Ala  
 115 120 125  
 Ser Asn Pro Tyr Pro Leu Pro Thr Pro Val Tyr Arg Pro Leu Val Gln  
 130 135 140  
 Ser Ser Asp His Lys Glu Asn Asn Asp Gly Ala Lys Glu Ser Cys Leu  
 145 150 155 160  
 Ala Asp Ala Glu Thr Val Ala Lys Ser Leu Leu Arg Cys Ser Val Ser  
 165 170 175  
 Leu Ser Val Val Ser Pro Lys Gln Leu Pro Thr Leu Lys Ala Ile Tyr  
 180 185 190  
 Asn Ala Ala Lys Arg Asn Pro Arg Ala Ala Asp Pro Ser Val Asp His  
 195 200 205  
 Ala Lys Asn Pro His Phe Leu Val Leu Leu Ser Asp Asn Phe Leu Glu  
 210 215 220  
 Ala Arg Thr Ala Leu Ser Arg Pro Leu Pro Gly Asn Leu Val Thr Asn

225	230	235	240
His Pro Ile Thr Lys Met Asp Thr Ala Ala Thr Ser Val Pro Val Pro			
245	250	255	
Thr Ser Asn Gly Asn Pro Ser Val Asn Gly Pro Met Leu Thr Arg Gln			
260	265	270	
Pro Asn Gly Val Val Ala Asn Ile Lys Thr Glu Pro Thr Thr Leu Pro			
275	280	285	
Pro Met Val Ser Ala Pro Ala Phe Ser His Val Thr Pro Val Ala Asn			
290	295	300	
Gly Val Ser Gln Gly Leu Ser Ser Val Gln Ser Pro Ser Pro Ser Leu			
305	310	315	320
Ile Ser Gln Glu Thr Asn Leu Ala Asn Asp Ser Val Gln Glu His Lys			
325	330	335	
Pro Leu Ile Asn Pro Ile Gln Gln Ser Ile Arg Pro Gly Gly Pro Ala			
340	345	350	
Asn Val Ser Ile Leu Asn Asn Leu Ser Gln His Arg Ser Val Ala Thr			
355	360	365	
Ile Ile Ser Gly Gly Met Pro Gly Ile Pro Met Ser Gly Thr Gly Gln			
370	375	380	
Ser Ile Gly Ser Gln Gln Val Val Gln Asn Thr Ala Phe Gly Ser Asn			
385	390	395	400
Thr Pro Ile Thr Gly Asn Ser Asn Ile Ala Val Ser Ser Ser Leu Gly			
405	410	415	
Gly Ile Gln Ser Asn Ile Gly Ile Ser Gly Pro Pro Val Thr Gln Gly			
420	425	430	
Gly Ser Met Gly Ser Thr Gln Leu Gly Gln Gly Gly Ile Asn Thr Asn			
435	440	445	
Gln Asn Met Ile Ser Ser Leu Gly Thr Thr Thr Val Ser Ser Ala Pro			
450	455	460	
Ala Met Met Pro Thr Pro Gly Met Ala Gln Gln Ala Gly Val Asn Ser			
465	470	475	480
Leu Gly Val Thr Asn Ser Ser Ala Met Asn Met Pro Ile Val Gln His			
485	490	495	
Pro Asn Ala Gln			
500	505	510	
Gln Pro Pro Pro Lys Tyr Val Lys Ile Trp Glu Gly Thr Leu Ser Gly			
515	520	525	
Gln Arg Gln Gly Gln Pro Val Phe Ile Cys Lys Leu Glu Gly Tyr Arg			
530	535	540	
Ser Gly Thr Ala Ser Glu Thr Leu Ala Ala Asp Trp Pro Glu Thr Met			
545	550	555	560
Gln Ile Val Arg Leu Ile Ala Gln Glu His Met Asn Asn Lys Gln Tyr			
565	570	575	
Val Gly Lys Ala Asp Phe Leu Val Phe Arg Thr Leu Asn Gln His Gly			
580	585	590	
Phe Leu Gly Gln Leu Gln Glu Lys Lys Leu Cys Ala Val Ile Gln Leu			
595	600	605	
Pro Ser Gln Thr Leu Leu Leu Ser Val Ser Asp Lys Ala Gly Arg Leu			
610	615	620	
Ile Gly Met Leu Phe Pro Gly Asp Met Val Val Phe Lys Pro Gln Val			
625	630	635	640
Pro Thr Gln Gln Pro Pro Met Gln Gln Gln Leu Gln Gln Gln Gln			
645	650	655	
Asn Gln Leu Gln Gln Gln Asn Gln Leu His Gln Gln His Gln Leu Gln			
660	665	670	
Pro Gln Asn Gln Leu Gln Gln His Gln Leu Gln Gln Gln Leu Gln			
675	680	685	

Gln Gln Gln Leu Gln Gln His Met Gln Leu Gln Thr Gln Gly Leu Pro  
690 695 700  
Leu Gln Gln Gln Ser Gln Gly His Pro Leu Gln Gln Gln Gln Met  
705 710 715 720  
Gln Gln Met Gln Gln Gln Gln Gln Gln Gln Ile Gln Gln Met Gln  
725 730 735  
Gln Gln Gln Gln Met Gln Gln Met Gln Gln Gln Gln Gln Pro Gln  
740 745 750  
Gln Leu Gln Gln Gln Gln Pro Gln Met Val Gly Thr Gly Met Gly  
755 760 765  
Gln Gln Gln Pro Gln Met Val Gly Thr Gly Met Gly Gln Gln Gln Pro  
770 775 780  
Gln Met Val Gly Ala Gly Met Gly Gln Gln Tyr Met Gln Gly His Gly  
785 790 795 800  
Arg Thr Val Gln Gln Met Met Gln Gly Lys Met Ala Pro Gln Gly Pro  
805 810 815  
Gly Ser Met Pro Gly Ala Gly Ser Met Pro Gly Gly Gly Tyr Leu Ser  
820 825 830